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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/656,288	09/06/2000	Oscar R. Herrera E.	10001963-1	9450

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EXAMINER	
TILLERY, RASHAWN N	
ART UNIT	**PAPER NUMBER**
2612	4

DATE MAILED: 05/21/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/656,288	HERRERA E., OSCAR R.	
	Examiner	Art Unit	
	Rashawn N Tillery	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 March 2004*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-15* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-12 have been considered but are moot in view of the new ground(s) of rejection. Because the previous rejection failed to teach all the limitations of Applicant's claim language (the output of electrical charge) the examiner will issue a new non-final.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1, 2, 9, 13 and 15 are rejected under 35 U.S.C. 102(e) as being anticipated by Hamaski (US5990952).

Regarding claim 1, Hamasaki discloses, in figure 1, a system for optically imaging, the system comprising:

an array of cells (1) for producing an electrical charge in response to photon stimulation;

a charge shift register (3) configured to receive the electrical charge produced by each cell in the array and to sequentially output the electrical charge of each cell;

at least two charge sensing nodes (each input to adder 17) for accumulating charge readable as a voltage (charge detecting part 4 converts the charges from HCCD 3 to voltages); and

a charge demultiplexor (14) configured to receive the output of the charge shift register and to selectively distribute the output to each of the at least two charge sensing nodes (the examiner notes that Applicant defines a demultiplexor on page 3, line 29 as "any device for receiving input from charge shift register 12 and selectively outputting to charge sensing nodes 16, 18.").

The examiner acknowledges the differences in the prior art and Applicant's invention as it is described in the specification; however, Applicant's claim language is currently written broadly enough where a broad interpretation of the prior art reference could read on it.

Regarding claim 2, Hamasaki discloses, in figure 1, a CCD array.

Regarding claim 9, Hamasaki discloses, in figure 1, producing a voltage signal segmented to represent an output of an array of cells that produce a cell electrical charge in response to photon stimulation, the method comprising:

a charge shift register configured to sequentially receive the charge from each cell (3);

at least two charge sensing nodes configured to accumulate charge and output a voltage signal (each input to adder 17); and

a charge demultiplexer configured to sequentially distribute each charge from the charge shift register to one of the at least two charge sensing nodes (14).

Regarding claims 13 and 15, Hamasaki discloses, in figure 1, adder 17 which sums the inputs of signal separator 14.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claims 5 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hynecek.

Regarding claims 5 and 12, Hynecek does not expressly disclose the use of an analog to digital converter. Official Notice is taken that it is well known in the camera art to utilize such teachings. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Hynecek's teachings by implementing an ADC since the use of ADCs provide for various advantages such as reduced manufacturing costs, high-speed readout and reduced noise.

2. Claims 3, 4, 6-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hynecek in view of Taniji (US5883667).

Regarding claim 3, Hamasaki does not expressly disclose an output buffer configured to receive the voltage of each of the at least two charge sensing nodes. Taniji reveals, in figure 2, that it is well known to amplify a signal from an output circuit. It would have been obvious to one of ordinary skill in the art, since Hamasaki teaches

outputting the voltage from two charge sensing nodes, it would have been obvious to one of ordinary skill in the art to implement Taniji's teachings of amplification. One would have been motivated to do so in an effort to amplify the analog signal before digitizing it.

Regarding claim 4, Hamasaki does not expressly disclose an amplifier configured to amplify the voltage from the at least two charge sensing nodes. Taniji reveals, in figure 2, that it is well known to amplify a signal from an output circuit. It would have been obvious to one of ordinary skill in the art, since Hamasaki teaches outputting the voltage from two charge sensing nodes, it would have been obvious to one of ordinary skill in the art to implement Taniji's teachings of amplification. One would have been motivated to do so in an effort to amplify the analog signal before digitizing it.

Regarding claim 6, Hamasaki discloses, in figure 1, a method for producing a voltage signal segmented to represent an output of an array of cells that produce a cell electrical charge in response to photon stimulation, the method comprising:

receiving each of the cell electrical charges from the cells in a charge shift register (3);

sequentially outputting the cell electrical charges from the charge shift register to a charge demultiplexor (14);

the charge demultiplexor selectively distributing the sequential cell charges to one of at least two charge sensing nodes (each input to adder 17).

Hamasaki does not expressly disclose a unit for sequentially reading a voltage produced by the cell charges in at least one of the at least two charge sensing nodes.

Taniji reveals, in figure 2, that it is well known to amplify a signal from an output circuit. It would have been obvious to one of ordinary skill in the art, since Hamasaki teaches outputting the voltage from two charge sensing nodes, it would have been obvious to one of ordinary skill in the art to implement Taniji's teachings of amplification. One would have been motivated to do so in an effort to amplify the analog signal before digitizing it.

Regarding claim 7, Hamasaki discloses the charge demultiplexor selectively distributing the sequential cell charges to one of at least two charge sensing nodes includes the charge demultiplexor distributing one cell charge to each of the at least two charge sensing nodes (the examiner notes that since Hamasaki teaches sequentially reading out the cell charges, only one cell charge would be received by the nodes at a time).

Regarding claim 8, Hamasaki discloses the charge demultiplexor selectively distributing the sequential cell charges to one of at least two charge sensing nodes includes the charge demultiplexor distributing multiple cell charges to each of the at least charge sensing nodes (the examiner notes that eventually all cell charges would be sent to the nodes upon completion of the charge transfer operation).

Regarding claim 10, see claim 3 above.

Regarding claim 11, see claim 4 above.

Regarding claim 14, Hamasaki discloses, in figure 1, adder 17 which sums the inputs of signal separator 14.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The following references teach related art: Tabei, Hashimoto and Suzuki.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rashawn N Tillery whose telephone number is 703-305-0627. The examiner can normally be reached on 9AM-6:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wendy Garber can be reached on 703-305-4929. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RNT

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